

# EAGLES

and

# OSPREY



Bald Eagle

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Large, striking birds of prey, the bald eagle, golden eagle, and osprey seem to embody power and majesty. All three occur in Pennsylvania, although none are common here. On a continental scale, human encroachment on habitat and environmental contamination have reduced the birds' numbers and lowered their breeding success, especially in the last 30 years. The Pennsylvania Game Commission is working to stabilize — and, it is hoped, to reverse — the current trend.

Taxonomists place the bald and golden eagles with the *buteos* — hawks with broad wings and broad, rounded tails. Other Pennsylvania *buteos*: broad-winged, red-tailed, rough-legged, and red-shouldered hawks. The osprey is the only species in family *Pandionidae*.

## Bald Eagle

The bald eagle's taxonomic name, *Haliaeetus leucocephalus*, means "white-headed sea eagle." The word "bald" is a misnomer. The mature eagle's head is covered with gleaming white feathers. Its body is dark brown, its tail white. Immatures are brown, mottled with white on their wings and body. Full adult plumage is attained in the fifth year. Both adults and immatures have a yellow bill and yellow feet, and legs feathered halfway down the tarsus.

Adults are 30-40 inches in length and weigh 8-14 pounds. Wingspan is 6-8 feet, standing height about two feet. As with other birds of prey, the female is larger than the male.

Bald eagles fly with strong, deep strokes, or soar on flattened wings. Their eyesight is among the keenest in the animal world,

five or six times sharper than a human's. An eagle's call is a rapid, harsh cackle, *kweek-kik-ik-ik-ik-ik*, or a lower *kak-kak-kak*.

Eagles feed mainly on fish (60-90 percent of their diet), either living or as carrion. They also eat birds and small mammals. Eagles soar above the water or sit on a convenient perch; when they sight a fish near the water's surface, they swoop down and snatch it in their talons. They use their talons for killing, and their heavy bills for tearing prey apart for eating. Sometimes an eagle will fly at an osprey, forcing it to drop a captured fish, which the eagle grabs in midair.

Eagles mate for life, although when one partner dies, the other quickly finds a mate if one is available. Nesting is preceded by a spectacular aerial courtship, with the birds locking talons, diving, and somersaulting in the sky.

An eagle's nest is called an eyrie. The big raptors choose large, sturdy trees or, less commonly, they nest on rock cliffs or on the ground. Nest sites are near lakes, rivers, reservoirs, and seashores.

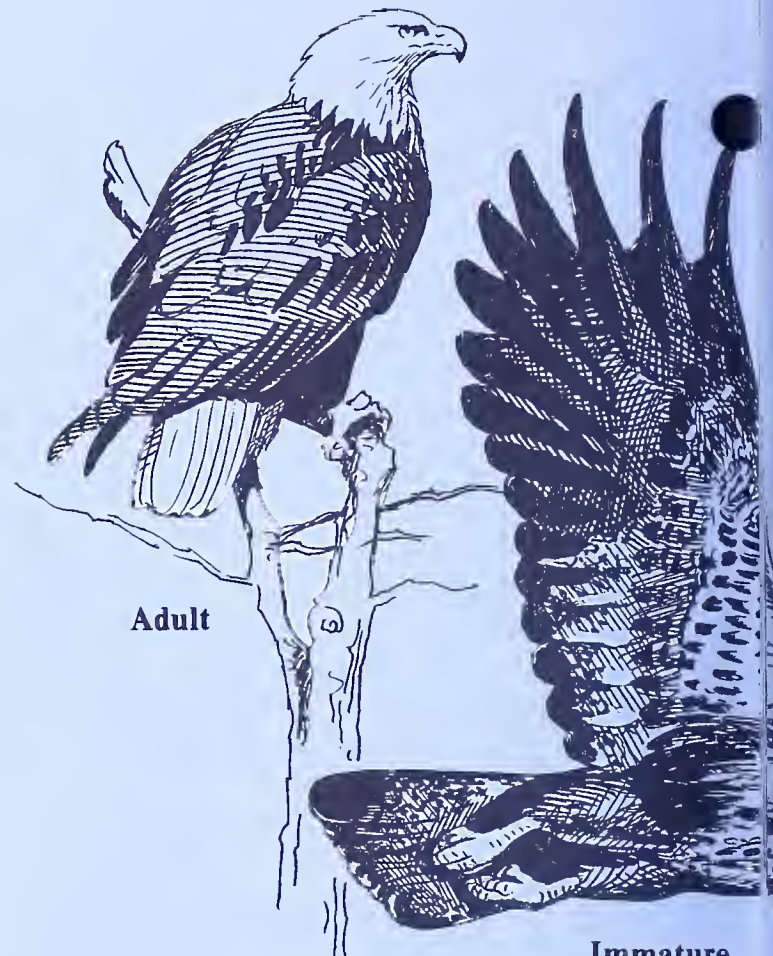
A new nest is about five feet wide and two feet high, with an inside depression 4-5 inches deep and 20 inches in diameter. Often a pair returns to the same nest year after year, adding a new layer of sticks, branches, and cornstalks, plus a lining of grass, moss, twigs, and weeds. Enlarged annually, some nests grow so big and heavy that they break the branches supporting them.

The female lays two eggs (sometimes only one and rarely





**Osprey**



**Adult**

**Immature**

**Bald Eagle**

three) in March or April. Eggs are about 2-3/4 by 2-1/2 inches, dull white, and unmarked. Both parents incubate.

If all goes well, the eggs hatch after about 35 days. Young birds (eaglets) are fed by their parents. A large, healthy hatchling may kill a smaller, weaker one.

Eaglets develop most of their feathers by 3-4 weeks, walk in the nest at 6-7 weeks, and begin to fly at about three months. Young separate from their parents in autumn. An estimated 50 percent of eaglets survive their first year.

Factors depressing reproduction are many. If humans intrude on the nest area, eagles may abandon eggs or leave young vulnerable to severe weather or predators. Eagles do not breed until 4-5 years of age. Their natural reproduction rate is slow. Breeding habitat — tall, sturdy trees near bodies of water in remote areas — is dwindling. Toxic chemicals introduced into the environment cause repeated nest failures (see "Raptor Reproduction" section at the end of this Note).

Eagles are uncommon in Pennsylvania, although they may show up here in all seasons. In spring, they migrate north in April, with stragglers into May. There were only three known bald eagle nests in Pennsylvania from 1963 through 1980, all in the Pymatuning/Conneaut Marsh region in the northwestern part of the state. However, during the 1981 season a fourth nest was discovered in the same general area as the others. (In the East, eagles nest mainly across southern Canada and in Florida.) August and September find eagles returning south, with most heading for Florida to winter and then breed. Pennsylvania's eagles seem to spend much of the winter near

their nesting area; apparently they do not migrate.

In winter, an occasional eagle may turn up almost anywhere in Pennsylvania, except in a city. Three popular wintering areas are Pymatuning; the upper Delaware River (primarily in the Pike County area); and the lower Susquehanna, between Lancaster and York counties. Wintering birds may form loose groups, or wander as individuals. Younger birds are more inclined to wander.

Bald eagles can live 30 years or longer in the wild. They have few natural enemies. Some are killed by thoughtless humans, and others are electrocuted when they land on power lines.

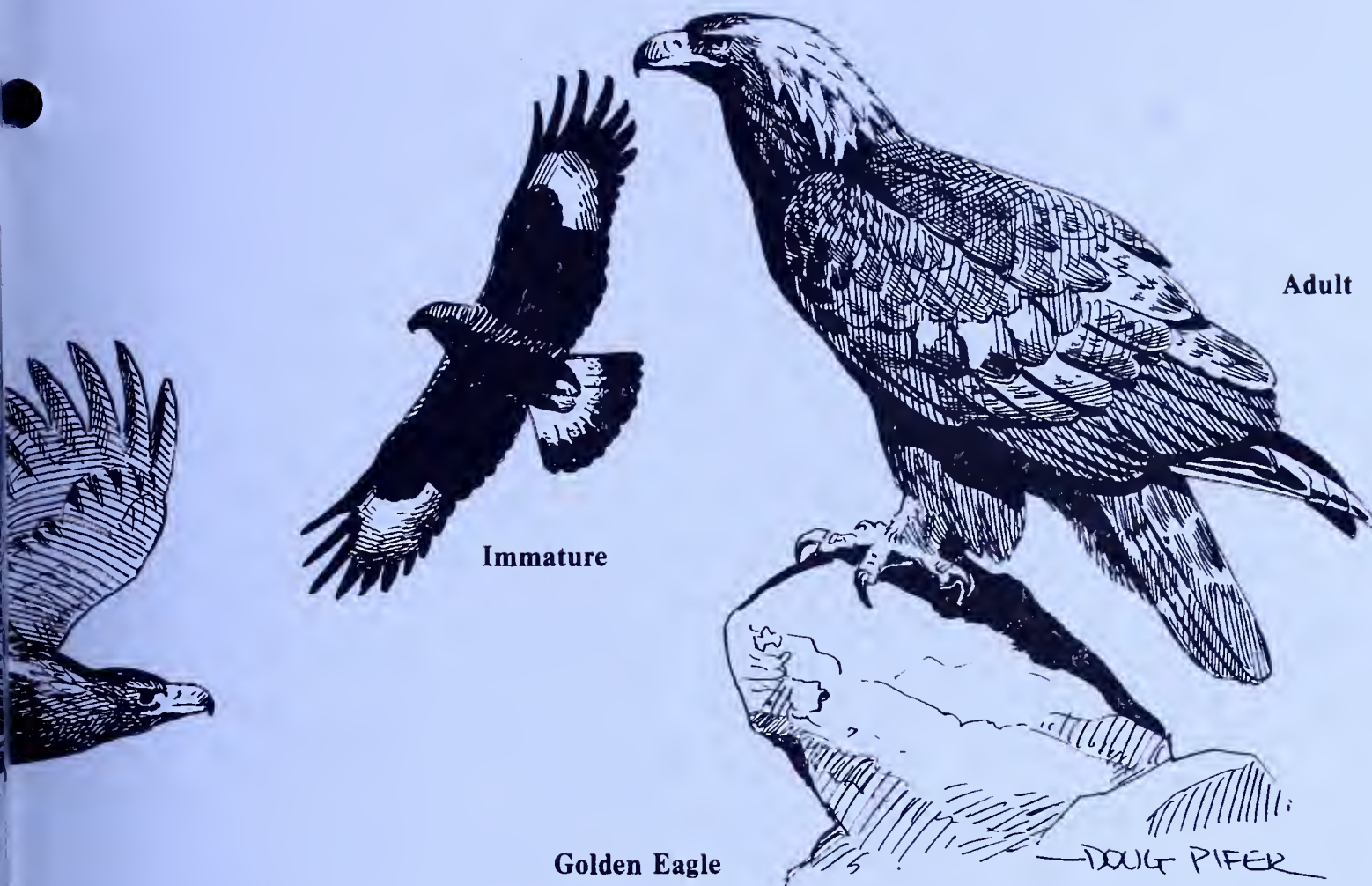
The bald eagle was chosen the United States' national symbol in 1782. At that time, an estimated 25,000 lived in what is now the lower 48 states. Today the same area probably supports 1100 breeding pairs, mostly in the South, the West, and the Pacific Northwest. The federal government lists the species as endangered south of the U.S.-Canada border. Fairly large populations still inhabit northwestern Canada and Alaska.

(Note: Persons wanting to see an eagle nest may do so from the Pennsylvania Game Commission's Pymatuning Waterfowl Museum, just south of Linesville. As of 1981, eagles had used the nest for six straight years. The best time to watch is from early March to mid-May, before trees leaf out. Spotting scopes or binoculars are necessary.)

### **Golden Eagle**

The golden eagle, *Aquila chrysaetos*, is a magnificent predator of remote, mountainous areas. The species occurs in





Eurasia and North Africa. In North America it is most common in the western United States, Canada, and Alaska. The golden eagle is rare in the Northeast.

Adults and immatures have rich, dark-brown body plumage, with gold-tipped feathers on the head and neck. The legs are feathered to the toes. Adults resemble immature bald eagles, but the goldens are darker. Immature goldens have white wing patches and, for their first several years, a broad, white band at the base of the tail.

Golden eagles are classic *buteos*, with long, rounded wings. They flap less and soar more than bald eagles. Body length is 30-40 inches; wingspan, 6-1/2-7-1/2 feet; standing height, about two feet. The call is a series of rapid, sharp chirps.

Prey includes small rodents, hares, rabbits, birds, reptiles, and fish. Goldens crush prey in their sharp talons, and use their large, hooked beaks to rip it apart for eating. In the West, these fierce, powerful predators have been known to knock young mountain sheep and goats off high ledges, then feast on the remains below.

In Pennsylvania, golden eagles are rare migrants in February and March, with stragglers in April and May. They do not breed in our state, although individuals are sometimes sighted in summer. They are rare migrants in September, October, and November, and they occasionally winter here in rugged, remote terrain.

Most goldens breed across central Canada, in the western U.S., Alaska, and Mexico. In the Northeast, active nest sites are reported from New York, New England, and Quebec.

Breeding habits are similar to those of bald eagles, except goldens often locate their nests on cliffs. After fledging, young remain in the nest area during summer, then wander away from the site with their parents. They do not breed until five years of age.

Estimates place the North American population at anywhere from 8,000 to 50,000. The golden eagle is not on the federal threatened or endangered list, but the Northeast may support no more than 100 individuals, according to some authorities.

### Osprey

The osprey, *Pandion haliaetus*, is a large, eagle-like hawk found throughout North America and in the Eastern Hemisphere. It inhabits seacoasts and the areas near large rivers and lakes. In Pennsylvania it shows up along the Susquehanna and Delaware rivers, and near creeks, ponds, lakes, and reservoirs throughout the state, depending on the season.

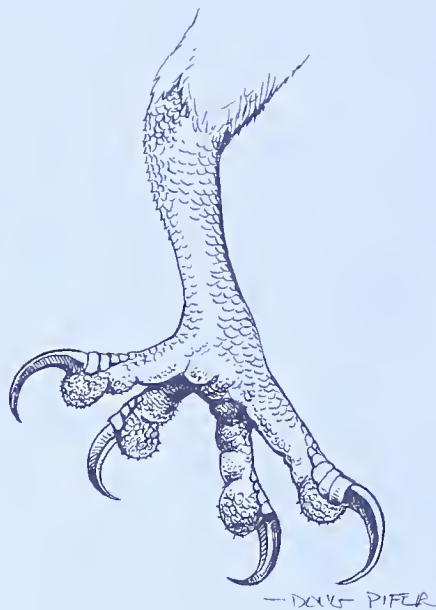
Plumage is dark above, white below. Adults and juveniles are colored alike. The head is largely white, with a black patch across each cheek. A conspicuous crook to the wings and black "wrist" marks visible from below are good field identifiers.

Except when migrating, ospreys flap more than they sail. Wingbeats are slow and deep. Ospreys hover 50-150 feet up and then plunge to the water for their fish prey, sometimes going all the way under.

Ospreys are 21-24 inches from bill to tail. Their wings span 4-1/2-6 feet. Standing height is about 1-1/2 feet. Call: a series of loud whistles, *cheep, cheep*, etc.



**OSPREY'S foot has spicules on toes for gripping slippery fish and reversible inner toes for carrying prey.**



In spring, ospreys migrate through Pennsylvania in April and May. An estimated 100 individuals summer here. Fall finds the fish-hawks heading south along the mountain ridges in August, September, and October. Some winter in Pennsylvania, although most fly to the southern U.S., Middle America, and northern South America.

Like eagles, ospreys build bulky nests of sticks and twigs, lined with inner bark, sod, or grasses. Sometimes they add debris (rope, fish net fragments, cans, seashells, etc.). Nests are in living or dead trees, on the ground, or on manmade structures — utility poles, fishing shacks, billboards, channel buoys, chimneys, and the like. Often added to and used year after year, the nests can become huge.

Eggs: three, sometimes two, and rarely four; 2-3/8 by 1-3/4 inches; white or pinkish white with brown spots and blotches. The female incubates 32-33 days, and young leave the nest when 51-59 days old.

The osprey may be nearly gone from Pennsylvania as a breeding species. In 1980, a Game Commission survey revealed only one nesting pair, in the eastern part of the state. In the Northeast, ospreys breed mainly along the Atlantic coast. Pesticides interfere with normal reproduction.

The Game Commission is working to re-establish the osprey in Pennsylvania. In 1980, a hacking project began, conducted

by the biology department at East Stroudsburg State College, and funded jointly by the Commission's "Working Together for Wildlife" fund and the Pennsylvania chapters of the National Audubon Society.

Hacking is a falconer's term for maintaining a young bird in a semi-wild condition, providing food until it can fend for itself. An osprey has strong ties to the area where it was born, and usually returns there to breed. The 5-year program will hack over 100 birds, which someday may form the nucleus of an active breeding population.

### **Raptor Reproduction**

Reproductive failure is a problem for the bald eagle and the osprey. Much of the problem stems from man's use of toxic chemicals. DDT, dieldrin, and other chlorinated hydrocarbons sprayed to kill insects, drain into rivers and get into fish. Bald eagles and ospreys eat a lot of fish, and accumulate the chemicals in their bodies. Other pollutants such as PCBs and heavy metals may also affect their reproduction.

The chemicals cause the birds to lay infertile or thin-shelled eggs, which break under the weight of an incubating bird. Although environmental regulations have restricted the use of "hard" pesticides, the chemicals do not break down rapidly and so remain in natural food chains.

At present, an alarming downward trend in raptor reproduction seems to have leveled off, perhaps indicating some progress toward cleaning up the environment or at least stabilizing present pollution levels.

### **How You Can Help**

Wildlife biologists need to learn more about raptor populations. If you find a bald eagle or osprey nest, report it to your local game protector. Be careful not to disturb the birds.

If you find an injured raptor or hear of one, call a game protector. Injured birds can often be treated and rehabilitated.

Eagles, ospreys, and other birds of prey are protected by federal and state laws. Report any violations.

Educate others about eagles and ospreys. Some people still believe these priceless natural treasures are detrimental to game and fish populations. They are not.

Contribute to the Game Commission's "Working Together for Wildlife" fund, and to private wildlife organizations and raptor rehabilitation centers.

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